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## **Relationships between Social Functioning and Quality of Life in a Population of Dutch Adult Psychiatric Outpatients**

F. J. Trompenaars, E. D. Masthoff, G. L. Van Heck, J. de Vries and P. P. Hodiament

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RELATIONSHIPS BETWEEN SOCIAL FUNCTIONING AND  
QUALITY OF LIFE IN A POPULATION OF DUTCH ADULT  
PSYCHIATRIC OUTPATIENTSF.J. TROMPENAARS, E.D. MASTHOFF, G.L. VAN HECK, J. DE VRIES &  
P.P. HODIAMONT

## ABSTRACT

**Background:** The relationship between social functioning and QOL in psychiatric patients has not been explicitly investigated before.

**Aims:** To investigate the relationship between social functioning and QOL in a population of psychiatric outpatients ( $N = 410$ ) with a broad spectrum of psychiatric disorders.

**Method:** Social functioning was assessed with the Groningen Social Behavior Questionnaire-100 (GSBQ-100) and the Global Assessment of Functioning (GAF) scale. QOL was measured with the WHO Quality of Life Assessment Instrument (WHOQOL-100).

**Results:** The study population experienced a wide range of problems concerning all aspects of social functioning. The numbers of problems were significantly higher compared with healthy controls and (partly) also compared with a norm group of psychiatric outpatients. Almost all scales of the GSBQ-100 were negatively correlated with all QOL aspects, whereas the GAF score correlated positively with all QOL aspects. In general, participants with problems on aspects of social functioning had lower QOL scores than those without such problems, even after a correction for the presence of psychopathology according to DSM-IV classification.

**Conclusion:** In addition to the presence of psychopathology, social functioning is significantly related to QOL. Therefore, it should be considered more systematically in psychiatric assessment, treatment and program evaluation.

## INTRODUCTION

During the past few decades, a large number of instruments have been developed to measure (changes in) social functioning, not only for the purpose of treatment evaluation, but also for use in scientific research (De Jong, 1999). Furthermore, the growing interest in social functioning has led to the introduction of a separate axis in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders*: axis V (DSM-III; American Psychiatric Association, 1980).

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Besides social functioning, quality of life (QOL) has also become an important topic and a field of growing interest in psychiatric research and treatment practice (Katschnig & Krautgartner, 2002). This interest stems from the realization that classical medical endpoints, such as morbidity and mortality, do not fully represent the potential outcomes of medical interventions (Gladis *et al.*, 1999; Power *et al.*, 1999; Van Nieuwenhuizen, 1998). Patients have to live, and come to terms with (often long lasting) disabilities resulting from their psychiatric disorder. This is covered by QOL measures and is not assessed by diagnostic measures reflecting morbidity and health status, and is only in part covered by indices of sickness impact.

Nowadays, the costs of psychiatric treatment (e.g. drugs, psychotherapy) are high, while at the same time financial means are limited. Due to newly developed forms of psychiatric treatment, it is likely that patients with psychiatric disorders will use healthcare facilities more frequently and during a long(er) period of their life. Outcome measures, such as social functioning and QOL, can be of great value in studies of cost-effectiveness of psychiatric treatment policies and in utility investigations (i.e. effects of treatment on patients' outcome). This is the more so as, apart from alleviation of symptoms, improvement in social functioning and QOL are important goals of treatment. However, when social functioning and QOL are important outcome measures, then it is necessary to scrutinize their mutual relationship in an extensive and systematic way.

Earlier studies have revealed that psychiatric disorders are associated with (often significant) decrements in social functioning and QOL (e.g. De Jong, 1984, 1991; Angermeyer *et al.*, 2002; Kuehner, 2002; Simon, 2003). Furthermore, social functioning, as measured by health status instruments, has a moderate relationship with the domain social relationships of QOL (Breek *et al.*, 2005). However, to the best of our knowledge, the relationship between social functioning and QOL in psychiatric patients has not been explicitly investigated before.

The aim of the present study was to investigate the relationship between social functioning and QOL in a population of psychiatric outpatients. For this purpose, a sample of a general population of adult psychiatric outpatients, suffering from a broad spectrum of psychiatric disorders, was examined. Social functioning was assessed using the Groningen Social Behavior Questionnaire-100 (GSBQ-100), a questionnaire explicitly designed to enable an evaluation of social functioning on several subsectors, and independent from (symptoms of) psychiatric disorders (De Jong, 1984; Van der Lubbe, 1995; De Jong & Van der Lubbe, 2001). QOL was assessed using the WHOQOL-100 (WHOQOL group, 1994), which meets the necessary criteria formulated in the scientific literature (i.e. QOL should be measured in a comprehensive, subjective, and culturally sensitive way (Deyo, 1984; Jenkins *et al.*, 1990; Breslin, 1991; Bullinger *et al.*, 1993; Laman & Lankhorst, 1994; Sartorius & Kuyken, 1994), and has a small overlap in content between psychiatric symptoms and QOL facets (WHOQOL Group, 1994; Trompenaars *et al.*, in press).

Because the QOL concept contains social components, it was a priori hypothesized that a decrease in social functioning had a negative relationship with QOL scores, especially on the (WHOQOL-100) domain Social Relationships (direct link) and to a lesser extent on the domain Psychological Health (decreased social functioning could be related to negative feelings, negative self-esteem, etc.). We expected the QOL domains Physical Health and Environment to have a less direct link with social functioning, because these domains are determined more by physical than by social factors.

## SUBJECTS AND METHODS

In the period from 1 March 2001 until 1 March 2002, data were collected from psychiatric outpatients at GGZ-Midden Brabant, the community mental health centre in Tilburg, the Netherlands. Approval was received from the regional Medical Ethical Committee. In order to minimize a possible language and/or cultural bias, all participants were outpatients of Dutch ethnic origin, aged 21–50 years. This age criterion was set to match the inclusion criteria of another study involving the same study population. Potential participants entered the study through a random selection procedure, in which one-third of all referrals were selected directly for psychiatric evaluation and administration of the questionnaires. After description of the study, written informed consent was obtained. Exclusion criteria were an inability to undergo the interviews and to fill in the questionnaires due to severe mental illness, illiteracy, dyslexia, mental retardation, sight or hearing problems, and cerebral damage. From the persons referred to the outpatient clinic of the centre ( $N = 3892$ ; 40.4% male), 1559 were potential participants (42.2% male). The total group that entered the present study contained 438 participants (male: 42.7%; mean age: 34.7 years,  $SD = 8.3$ ; female: 57.3%; mean age: 32.8 years,  $SD = 8.2$ ). From this group, 28 participants were unable to undergo the research protocol, due to severe psychotic disorder ( $N = 7$ ), major depressive episode ( $N = 9$ ), dyslexia ( $N = 2$ ) or mental retardation ( $N = 2$ ). Eight patients refused to participate (four diagnosed with antisocial personality disorder; four with substance-related disorder). Thus, 410 participants completed the test booklet (total response rate: 93.6%; male: 41.2%; mean age: 34.8 years,  $SD = 8.4$ ; female: 58.8%; mean age: 32.5 years,  $SD = 8.2$ ).

### Measures

Participants were asked to complete self-administered questionnaires for measuring social functioning and QOL. In addition, they underwent two semi-structured interviews (held in two separate sessions) for obtaining axis I and axis II diagnoses, according to DSM-IV. These diagnoses were collected to provide insight into the composition of the group of participants regarding their psychopathology.

#### *Social functioning*

Social functioning was assessed using the Groningen Social Behavior Questionnaire-100 (GSBQ-100; De Jong & Van der Lubbe, 2001). The 100-item GSBQ is a self-report inventory. The questions of the GSBQ-100 pertain to respondents' problems with their functioning in different social roles, with a 4-point rating scale ranging from 1, never, to 4, always. The 100 questions (e.g. 'I had a quarrel with (one of) my parents', 'I was able to discuss personal problems with my partner', 'My behavior has clearly irritated my partner') are grouped into 15 dimensions, which were all used in this study: (1) Self-care, (2) Citizen role, (3) Own family, (4) Living alone, (5) Relationship with parents, (6) Relationship with siblings, (7) Relationship with partner, (8) Functioning without partner, (9) Relationship with children < 15 years, (10) Relationship with children > 15 years, (11) Relationship with friends, (12) Study/education, (13) Work, (14) Home role and (15) Daily activities. The total scores on the 15 dimensions of the GSBQ-100 are dichotomized according to two sets of threshold values. A score above the cut-off point of threshold value set 1 (used

in the present study) strongly indicates a problem regarding interpersonal functioning at the concerned GSBQ-100 dimension (high specificity). A score below the cut-off point of threshold set 2 is likely to exclude problems in social functioning on the respective GVSG-100 scale (high sensitivity). Previous studies using the GSBQ-100 have demonstrated both a sufficient reliability and validity (De Jong & Van der Lubbe, 2001).

In the present study, two sets of norm scores were used: GSBQ-100 scores from a group of healthy controls and from a group of psychiatric patients. The norm group of healthy controls was derived from a random sample of the Dutch population ( $N = 672$ ; male: 43%; female: 57%; mean age: 38.3 years,  $SD = 12.1$ ). From this random sample, 420 participants were regarded as healthy controls, using a total score of  $\leq 1$  on the General Health Questionnaire (GHQ-12; Koeter & Ormel, 1991) and a negative answer on three questions ('Have you been ill during the past four weeks?', 'Did you attend a physician during the past four weeks?', 'Did you suffer from a somatic disease during the past four weeks?') as selection criteria (De Jong & Van der Lubbe, 2001). The norm group of psychiatric patients consisted of 199 participants (male: 46%; female: 54%; mean age: 37.6 years,  $SD = 11.5$ ) suffering from a broad variety of (mainly chronic) psychiatric disorders (neurotic disorders: 38%, affective psychoses: 18%, schizophrenic psychoses: 6%, other psychoses: 5%; personality disorders: 6%; other diagnoses: 27%) and receiving treatment in four different outpatient clinics (Van der Lubbe, 1995).

#### *Global Assessment of Functioning (GAF)*

The judgement of the individual's overall level of functioning was given in a unidimensional way, using the so-called Global Assessment of Functioning (GAF) rating (American Psychiatric Association, 1994). Scores can range from 1 to 10 (Persistent danger of severely hurting self or other, or persistent inability to maintain minimal personal hygiene, or serious suicidal act with clear expression of death), to 91 to 100 (Superior functioning in a wide range of activities, life's problems never seem to get out of hand, is sought out by others because of his or her many positive qualities. No symptoms). With regard to validity and reliability, the instruction of the American Psychiatric Association to rate social functioning on axis V with only one GAF score on a unidimensional rating scale has been criticized, because this very simple way of rating is considered to be not at all in proportion to the various subsectors in which social functioning can be divided, and the complex and extensive ways that psychiatric disorders can be classified (Goldman *et al.*, 1992; De Jong, 1999). However, the GAF scale was used in this study because it operationalizes social functioning according to current DSM-IV classification criteria. In the present study, the average correlation between the GAF score and the scales of the GSBQ-100 was 0.21 (ranging from 0.03 (Relationship with siblings; not significant) to 0.42 (Daily activities;  $p < 0.001$ )).

#### *Quality of life*

Quality of life was measured using the WHOQOL-100 (WHOQOL Group, 1994, 1998), Dutch version (De Vries & Van Heck, 1995). The WHOQOL-100 is a generic measure designed for use in a wide spectrum of psychological and physical disorders. It is a multi-dimensional measure for subjective assessment of QOL. During the development, focus groups of patients, health professionals and well people proposed items that were selected and attached to a 5-point Likert scale. The 100 items are organised in 24 facets, subsumed

within six domains (WHOQOL Group, 1998) and one facet measuring overall QOL and general health. High scores indicate good QOL, except for the facets Pain and discomfort, Negative feelings, and Dependence on medication or treatments, which are negatively framed. The time frame of reference is the previous two weeks. Regarding somatic diseases, the WHOQOL-100 has good to excellent validity and reliability (Skevington *et al.*, 2001; Masthoff *et al.*, 2005).

#### *DSM-IV, axis I diagnosis.*

For the axis I diagnosis, the Schedules for the Clinical Assessment in Neuropsychiatry (SCAN 2.1) were used (Wing *et al.*, 1990; Giel & Nienhuis, 1996). The SCAN is a comprehensive semi-structured clinical diagnostic interview, developed under the auspices of the WHO, aimed at the assessment and classification of psychiatric disorders in adults (Wing *et al.*, 1990; Giel & Nienhuis, 1996; Wing *et al.*, 1998). The interviews were administered by two psychiatrists (EDM, FJT) trained and certified at the WHO centre in Groningen, the Netherlands. Most of the studies on the psychometric properties of the SCAN have only examined earlier versions or parts of the current version (Andrews *et al.*, 1995; Nelson *et al.*, 1999). Rijnders *et al.* (2000) tested the psychometric properties of the integral SCAN 2.1. Overall reliability was qualified as moderate to substantial and, with regard to the test-retest situation, as fair to moderate. In the standardized situation using videotaped interviews by experts, sensitivity as well as specificity proved to be substantial to almost perfect.

#### *DSM-IV, axis II diagnosis*

For the axis II diagnosis, the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II) (Spitzer *et al.*, 1990), version 2.0 (First *et al.*, 1997), Dutch version (Weertman *et al.*, 2000), was used. The SCID-II, 2.0 is a semi-structured interview with 140 items, organized by diagnosis, covering the 10 personality disorders included in DSM-IV axis II and the two personality disorders listed in the DSM-IV Appendix (i.e. diagnoses requiring further study). The instrument provides categorical diagnoses and dimensional scores for each disorder. With regard to the psychometric properties, Maffei *et al.* (1997) investigated the interrater reliability and internal consistency. Interrater reliability was good for categorical diagnoses as well as dimensional diagnoses. Internal consistency for the dimensional scales proved to be satisfactory.

#### **Statistical analyses**

For the study population, the absolute scores on the scales of the GSBQ-100 were dichotomized according to threshold value set 1 (which is given in Table 2) in order to provide the most strict interpretation of social functioning. Percentages of subjects experiencing problems with social functioning on the different GSBQ-100 scales were calculated and compared with corresponding values of norm groups of healthy controls and psychiatric outpatients using chi-square tests ( $p < 0.005$  after adjustment for multiple testing). Pearson correlations were calculated between the GSBQ-100 scales and the GAF score, on the one hand, and the domains and the overall QOL and general health facet, on the other hand. A  $p$ -value below 0.01 was considered significant. To determine relationships between dichotomized scales of the GSBQ-100, using threshold value set 1, and the WHOQOL-100, ANCOVAs were used (general linear model, univariate;  $p < 0.005$  after adjustment for multiple testing).



The presence of an axis I diagnosis, an axis II diagnosis, and co-morbidity (axis I and axis II diagnosis simultaneously present) were entered as covariates (significance level  $p < 0.005$ ). The data were processed using the Statistical Package for the Social Sciences (SPSS, version 13.0 for Windows).

## RESULTS

For all participants axis I and axis II diagnoses according to DSM-IV were determined. The results are presented in Table 1. Of the 410 participants, 278 had at least one axis I diagnosis and 206 had at least one axis II diagnosis. A total of 130 participants suffered from co-morbidity and 54 participants had no diagnosis according to the DSM-IV classification.

Considerable percentages of the study population had problems with social functioning as measured with the GSBQ-100. These percentages ranged from 23.7% (Self-care) to 72.2% (Daily activities), according to threshold value set 1. On all scales of the GSBQ-100, the percentages of people having problems with social functioning were higher in the study population than in the norm group of healthy controls. The study population also had higher problem rates on four of the GSBQ-100 scales (Self-care, Living alone, Relationship with siblings and Daily activities) when compared with the norm group of psychiatric patients (see Table 2).

As can be seen in Table 3, negative correlations were found between almost all scales of the GSBQ-100 and scores on the QOL domains, and the overall QOL and general health facet of the WHOQOL-100. The GAF score correlated positively with all QOL aspects.

**Table 1**  
Axis I and axis II diagnosis according to DSM-IV classification for the total outpatient sample ( $N = 410$ )

Axis I diagnosis	$N^1$	Axis II diagnosis	$N^1$
Pervasive developmental disorder	4	Paranoid personality disorder	4
ADDB disorder	5	Schizoid personality disorder	6
Substance related disorder	27	Schizotypal personality disorder	2
Psychotic disorder	4	Antisocial personality disorder	23
Mood disorder	113	Borderline personality disorder	49
Anxiety disorder	73	Histrionic personality disorder	6
Somatoform disorder	9	Narcissistic personality disorder	18
Sexual disorder/gender identity disorder	9	Avoidant personality disorder	47
Eating disorder	15	Dependent personality disorder	24
Impulse-control disorder	5	Obsessive-compulsive personality disorder	21
Adjustment disorder	36	Personality disorder not otherwise specified	59
Other disorder	9	Postponed diagnosis	12
Other conditions <sup>2</sup>	53	No diagnosis	196
No diagnosis	89		

ADDB disorder, Attention-deficit and disruptive behavior disorder.

<sup>1</sup> The figures represent frequencies of recorded diagnoses. Due to co-morbidity (i.e. the classification of more than one diagnosis on axis I or axis II) the totals of recorded diagnoses per axis exceed the total number of participants.

<sup>2</sup> Other conditions: other conditions that may be a focus of clinical attention (mostly V-codes).



Table 2

Chi-square tests: differences in percentages of healthy controls (HC;  $N = 420$ ), norm group psychiatric patients (NPP;  $N = 199$ ) and study population (SP;  $N = 410$ ) with problems in interpersonal functioning as measured with the GSBQ-100 according to threshold value set 1 (THV S1)

Dimensions of the GSBQ-100	THV S1	HC	NPP	SP	$\chi^2$ I	$\chi^2$ II
Self-care	7	3.1	13.1	23.7	76.31*	9.17**
Citizen role	9	12.8	45.8	57.1	177.87*	6.65
Own family	18	6.1	27.6	36.9	87.88*	3.24
Living alone	16	0.0	28.4	49.5	65.35*	7.91**
Relationship with parents	15	8.0	38.1	41.6	108.19*	0.54
Relationship with siblings	15	20.1	32.9	47.0	57.62*	9.28**
Relationship with partner	19	7.3	35.6	42.2	25.82*	1.45
Functioning without partner	10	44.4	49.4	64.3	9.73**	4.52
Relationship with children < 15 years	12	5.0	34.0	38.9	46.78*	0.35
Relationship with children > 15 years	15	15.6	35.7	54.2	27.67*	3.98
Relationship with friends	12	19.6	32.0	39.9	38.59*	3.47
Study/education	16	2.2	25.0	29.6	12.53*	0.12
Work	13	6.4	41.0	47.7	106.04*	1.01
Home role	12	2.4	21.1	35.6	10.69**	2.76
Daily activities	13	5.7	51.5	72.2	387.07*	11.76*

$\chi^2$  I: SP versus HC;  $\chi^2$  II: SP versus NPP; chi-square value accentuated with \*:  $p < 0.001$ ; chi-square value accentuated with \*\*:  $p < 0.005$ ; all other chi-square values: not significant.

Table 3

Pearson correlations between GSBQ-100, GAF scale, and WHOQOL-100

Dimensions of the GSBQ-100	N	WHOQOL-100				
		F0	DI	DII	DIH	DIV
Self-care	410	-0.35	-0.36	-0.37	-0.27	-0.36
Citizen role	410	-0.35	-0.34	-0.40	-0.35	-0.47
Own family	309	-0.26	-0.25	-0.27	-0.27	-0.44
Living alone	101	-0.29	-0.48	-0.38	-0.26	-0.49
Relationship with parents	344	-0.21	-0.15	-0.16	-0.35	-0.24
Relationship with siblings	351	-0.19	-0.17	-0.17	-0.35	-0.18
Relationship with partner	270	-0.26	ns	-0.23	-0.56	-0.25
Functioning without partner	140	-0.22	-0.20*	-0.19*	-0.25	-0.21*
Relationship with children < 15 years	139	-0.24	-0.19*	-0.22*	-0.20*	-0.26
Relationship with children > 15 years	59	ns	ns	ns	ns	ns
Relationship with friends	376	-0.28	-0.28	-0.36	-0.41	-0.31
Study/education	44	-0.50	-0.61	-0.43	-0.36*	-0.47
Work	197	-0.36	-0.48	-0.37	-0.23	-0.38
Home role	337	-0.35	-0.50	-0.42	-0.24	-0.37
Daily activities	410	-0.57	-0.51	-0.55	-0.40	-0.51
GAF	410	0.47	0.49	0.42	0.36	0.47

F0 = overall quality of life and general health; DI = physical health; DII = psychological health; DIH = social relationships; DIV = environment.

Correlations with \*:  $p < 0.05$ ; all other correlations:  $p < 0.01$ .

Table 4  
ANCOVA: Relationships between dichotomized scales of the GSBQ-100, using threshold value set 1, and the WHOQOL-100, with psychopathology as covariate

Dimensions of the GSBQ-100	WHOQOL-100									
	DI		DII		DIII		DIV		F0	
	F	p	F	p	F	p	F	p	F	p
Self-care	32.05 <sup>1,2</sup>	< 0.001	22.68 <sup>1,2</sup>	< 0.001	12.26	< 0.005	27.78 <sup>2</sup>	< 0.001	27.40 <sup>1,2</sup>	< 0.001
Citizen role	20.94 <sup>1,2</sup>	< 0.001	33.80 <sup>1,2</sup>	< 0.001	31.47 <sup>2</sup>	< 0.001	46.48 <sup>1,2</sup>	< 0.001	26.59 <sup>1,2</sup>	< 0.001
Own family	6.75 <sup>1</sup>	ns	5.05 <sup>1,2</sup>	ns	10.65	< 0.005	38.70 <sup>2</sup>	< 0.001	4.55 <sup>1,2</sup>	ns
Living alone	7.19	ns	7.01	ns	0.54	ns	8.01 <sup>2</sup>	ns	1.31	ns
Relationship with parents	3.47 <sup>1,2</sup>	ns	2.97 <sup>2</sup>	ns	34.72	< 0.001	11.26 <sup>2</sup>	< 0.005	7.93 <sup>1,2</sup>	ns
Relationship with siblings	4.33 <sup>1,2</sup>	ns	3.41 <sup>1,2</sup>	ns	19.46	< 0.001	7.49 <sup>2</sup>	ns	3.91 <sup>1,2</sup>	ns
Relationship with partner	0.36 <sup>1,2</sup>	ns	6.66 <sup>1,2</sup>	ns	61.15	< 0.001	11.58 <sup>2</sup>	< 0.005	10.96 <sup>1,2</sup>	< 0.005
Functioning without partner	1.68	ns	2.69	ns	4.52	ns	5.02	ns	3.10	ns
Relationship with children	2.33	ns	2.10	ns	0.17	ns	5.58	ns	3.41 <sup>2</sup>	ns
< 15 yrs										
Relationship with children	1.74 <sup>1</sup>	ns	0.00 <sup>1</sup>	ns	1.79	ns	0.08	ns	0.03 <sup>1</sup>	ns
> 15 yrs										
Relationship with friends	11.31 <sup>1,2</sup>	< 0.005	26.29 <sup>2</sup>	< 0.001	37.53	< 0.001	14.20 <sup>2</sup>	< 0.001	15.20 <sup>1,2</sup>	< 0.001
Study/education	6.36	ns	3.01	ns	1.65	ns	3.72	ns	3.31	ns
Work	39.65 <sup>1</sup>	< 0.001	20.01 <sup>2</sup>	< 0.001	5.49	ns	21.74 <sup>2</sup>	< 0.001	27.00 <sup>2</sup>	< 0.001
Home role	98.70 <sup>1</sup>	< 0.001	49.38 <sup>2</sup>	< 0.001	8.01	ns	21.77 <sup>2</sup>	< 0.001	30.68 <sup>2</sup>	< 0.001
Daily activities	84.52 <sup>1,2</sup>	< 0.001	85.08 <sup>2</sup>	< 0.001	39.58	< 0.001	69.15 <sup>2</sup>	< 0.001	105.29 <sup>2</sup>	< 0.001

DI = Physical Health; DII = Psychological Health; DIII = Social Relationships; DIV = Environment; F0 = Overall QOL and General Health; ns = not significant.

<sup>1</sup> Axis I diagnosis significant as covariate ( $p < 0.005$ ).

<sup>2</sup> Axis II diagnosis significant as covariate ( $p < 0.005$ ).

<sup>3</sup> Co-morbidity significant as covariate ( $p < 0.005$ ).

The presence of a diagnosis on either axis I or axis II, according to DSM-IV classification, in general played a significant role as a covariate in the relationship between social function and QOL. The factor co-morbidity did not play a role in QOL scores. Furthermore, in general, subjects with problems on aspects of social functioning had lower QOL scores than those without such problems. This was especially the case for the GSBQ-100 dimensions Self-care, Citizen role, Relationships with friends, Work, Home role and Daily activities. The dichotomized scores on the GSBQ-100 dimensions Living alone, Functioning without partner, Relationship with children < 15 years and > 15 years, and Study/education were not associated with significant differences in subjective QOL. The results are presented in Table 4.

## DISCUSSION

In the present study, the relationship between social functioning and QOL was investigated in a population of psychiatric outpatients suffering from a broad spectrum of psychiatric disorders. Social functioning was assessed with the GSBQ-100 and the GAF, and QOL was assessed using with the WHOQOL-100.

On all aspects of social functioning, considerable percentages of the study population experienced problems. These rates were evidently higher than those of the norm group healthy controls, which accords with earlier findings (e.g. De Jong, 1984, 1991). Surprisingly, in comparison with the norm group psychiatric outpatients, the study population also had higher problem rates on four of the GSBQ-100 dimensions (Self-care, Living alone, Relationship with siblings and Daily activities). Non-significant differences were probably due to small sample sizes on some of the GSBQ-100 dimensions (e.g. Study/education). A possible explanation for this difference is that the study population consisted of psychiatric outpatients who were recently referred to a psychiatric outpatient clinic. They were not yet receiving treatment at the moment of investigation. In contrast, the norm group of psychiatric outpatients was already receiving treatment. Considering the fact that psychiatric outpatients experience an improvement in social functioning (and QOL) over the course of time (during which treatment is provided) (Addington *et al.*, 2003), it is reasonable to believe that the social functioning deficits of the norm group were somewhat decreased due to the factors Time and/or Treatment, which was not the case for the study population. Another possible explanation for the found differences in GSBQ-100 dimensions between the study sample and the norm group of psychiatric outpatients is the considerable difference between the composition of both groups concerning psychiatric diagnostic categories. A considerable percentage of the participants of the present study suffered from one or more personality disorders (50.2%), whereas the percentage of psychotic disorders in this sample was low (1.0%). In contrast, only 6% of the patients from the norm group were diagnosed with a personality disorder, whereas 29% of them suffered from a psychotic disorder. Hypothetically, this could mean that the presence of a personality disorder is associated with more impairment of (several aspects of) social functioning than the presence of a psychiatric disorder as classified on axis I of DSM-IV.

Almost all scales of the GSBQ-100 were negatively correlated with the domains and the overall QOL and general health facet of the WHOQOL-100. Problems with social functioning

in general had equally negative effects on all aspects of QOL, and not, as was hypothesized a priori, mainly on the domains Social relationships and Psychological health. The GAF score was positively related to all QOL aspects. These results point out that deficits in different aspects of social functioning are correlated with poor QOL in a broad sense.

In general, subjects with problems on aspects of social functioning had lower QOL scores than those without such problems, even when adjusted for the presence of psychopathology according to DSM-IV classification. This indicates that in psychiatric outpatients, apart from the factor psychopathology, social functioning is related to the psychosocial outcome measure QOL. This justifies the classification of social functioning on a separate axis of DSM-IV.

A limitation of the present study is its cross-sectional design. This hampers a judgement about the direction of the relationships that were found between social functioning and QOL. Also, it is not ruled out that an unidentified third variable, apart from the factor 'presence of psychopathology', which was controlled for in this study, explains both social functioning and QOL. Therefore, further research on the relationship between social functioning and QOL should have a prospective longitudinal study design and should control for other variables.

## CONCLUSION

Psychiatric outpatients experience considerable rates of problems concerning all aspects of social functioning. These rates are evidently higher than those of healthy controls. Social functioning is, apart from the presence of psychopathology, significantly related to QOL and, therefore, should be considered in psychiatric assessment, treatment and program evaluation.

## REFERENCES

- ADDINGTON, J., YOUNG, J. & ADDINGTON, D. (2003) Social outcome in early psychosis. *Psychological Medicine*, **33**, 1119–1124.
- AMERICAN PSYCHIATRIC ASSOCIATION (1980) *Diagnostic and Statistical Manual of Mental Disorders*, 3rd edition (DSM-III-R). Washington, DC: American Psychiatric Association.
- AMERICAN PSYCHIATRIC ASSOCIATION (1994) *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV). Washington, DC: American Psychiatric Association.
- ANDREWS, G., PETERS, L., GUZMAN, A.-M. & BIRD, K. (1995) A comparison of the two structured diagnostic interviews: CIDI and SCAN. *Australia and New Zealand Journal of Psychiatry*, **29**, 124–132.
- ANGERMEYER, M.C., HOLZINGER, A., MATSCHINGER, H. & STENGLER-WENZKE, K. (2002) Depression and quality of life: results of a follow-up study. *International Journal of Social Psychiatry*, **48**, 189–199.
- BREEK, J.C., DE VRIES, J., VAN HECK, G.L., VAN BERGE HENEGOUWEN, D.P. & HAMMING, J.F. (2005) Assessment of disease impact in patients with intermittent claudication: discrepancy between health status and quality of life. *Journal of Vascular Surgery*, **41**, 433–450.
- BRESLIN, S. (1991) Quality of life: how is it measured and defined? *Urologica Internationalis*, **46**, 246–251.
- BULLINGER, M., ANDERSON, R., CELLA, D. & AARONSON, N.K. (1993) Developing and evaluating cross-cultural instruments from minimum requirements to optimal models. *Quality of Life Research*, **2**, 451–459.

- DE JONG, A. (1984) On Psychiatric Invalidity [In Dutch: Over psychiatrische invaliditeit], PhD Thesis. Groningen: Rijksuniversiteit Groningen.
- DE JONG, A. (1991) Deviant social behavior of psychiatric patients. Theoretical backgrounds, instruments and classification [In Dutch: Afwijkend sociaal gedrag van psychiatrische patiënten. Theoretische achtergronden, instrumenten en classificatie]. *Tijdschrift voor Psychiatrie*, **33**, 299–316.
- DE JONG, A. (1999) Investigations into everyday consequences in society of psychiatric disorders. [In Dutch: Onderzoek naar alledaagse, maatschappelijke gevolgen van psychiatrische ziekten] In *Handbook of Psychiatric Epidemiology* (eds A. de Jong, W. van den Brink, J. Ormel & D. Wiersma). Maarssen: Elsevier/De Tijdstroom.
- DE JONG A. & VAN DER LUBBE, P.M. (2001) *Groningen Social Behavior Questionnaire* [In Dutch: Groningse Vragenlijst over Sociaal Gedrag]. Manual. Groningen: Rijksuniversiteit Groningen.
- DE VRIES, J. & VAN HECK, G.L. (1995) *The Dutch Version of the WHOQOL-100*. [In Dutch: De Nederlandse versie van de WHOQOL-100]. Tilburg: Tilburg University.
- DEYO, H.E. (1984) Pitfalls in measuring the health status of Mexican Americans: comparative validity of the English and Spanish Sickness Impact Profile. *American Journal of Public Health*, **74**, 569–573.
- FIRST, M.B., SPITZER, R.L., GIBBON, M. & WILLIAMS, J.B.W. (1997) *The Structured Clinical Interview for DSM-IV Axis-II Disorders*. Washington, DC: American Psychiatric Press.
- GIEL, R. & NIENHUIS, F.J. (1996) *SCAN-2.1: Schedules for Clinical Assessment in Neuropsychiatry*. [In Dutch: Vragenschema's voor klinische beoordeling in neuropsychiatrie]. Geneva: WHO, Division of Mental Health/Groningen: University of Groningen, Division of Social Psychiatry.
- GLADIS, M.M., GOSCH, E.A., DISHUK, N.M. & CRITS-CRISTOPH, P. (1999) Quality of life: expanding the scope of clinical significance. *Journal of Consulting and Clinical Psychology*, **67**, 320–331.
- GOLDMAN, H.H., SKODOL, A.E. & LAVE, T.R. (1992) Revising Axis V for DSM-IV: a review of measures of social functioning. *American Journal of Psychiatry*, **149**, 1148–1156.
- JENKINS, C.D., JONO, R.T., STANTON, B.A. & STROUP-BENHAM, C.A. (1990) The measurement of health-related quality of life: major dimensions identified by factor analysis. *Social Science and Medicine*, **31**, 25–33.
- KATSCHNIG, H. & KRAUTGARTNER, M. (2002) Quality of Life. A new dimension in mental health care. In *Psychiatry in Society* (ed. N. Sartorius, W. Gaebel, J.J. Lopez-Ibor & M. Maj). Chichester: Wiley.
- KOETER, M.W.J. & ORMEL, J. (1991) *General Health Questionnaire. Dutch Version and Manual*. Lisse: Swets & Zeitlinger.
- KUEHNER, C. (2002) Subjective quality of life: validity issues with depressed patients. *Acta Psychiatrica Scandinavica*, **106**, 62–70.
- AMAN, H. & LANKHORST, G.J. (1994) Subjective weightings of disability: an approach to quality of life assessment in rehabilitation. *Disability and Rehabilitation*, **16**, 198–204.
- MAFFEI, C., FOSSATI, A., AGOSTONI, I., BARRACO, A., BAGNATO, M., DEBORAH, D., NAMIA, C., NOVELLA, L. & PETRACHI, M. (1997) Interrater reliability and internal consistency of the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II), Version 2.0. *Journal of Personality Disorders*, **11**, 279–284.
- MASTHOFF, E.D., TROMPENAARS, F.J., VAN HECK, G.L., HODIAMONT, P.P. & DE VRIES, J. (2005) Validation of the WHOQOL-100 in a population of Dutch adult psychiatric outpatients. *European Psychiatry*, **20**, 465–473.
- NELSON, C.B., REHM, J., ÜSTÜN, B., GRANT, B. & CHATTERJI, S. (1999) Factor structures for DSM-IV substance disorder criteria endorsed by alcohol, cannabis, cocaine and opiate users: results from the WHO reliability and validity study. *Addiction*, **94**, 843–855.
- POWER, M., BULLINGER, M., HARPER, A. & THE WHOQOL GROUP (1999) The World Health Organization WHOQOL-100: Tests of the universality of quality of life in 15 different cultural groups worldwide. *Health Psychology*, **18**, 495–505.
- RIJNDERS, C.A.Th., VAN DEN BERG, J.F.M., HODIAMONT, P.P.G., NIENHUIS, F.J., FURER, J.W., MULDER, J. & GIEL, R. (2000) Psychometric properties of the Schedules for Clinical Assessment in Neuropsychiatry (SCAN-2.1). *Social Psychiatry and Psychiatric Epidemiology*, **35**, 348–352.
- SARTORIUS, N. & KUYKEN, W. (1994) Translation of health status instruments. In *Quality of Life Assessment: International Perspectives* (eds J. Orley & W. Kuyken). Berlin: Springer-Verlag.
- SIMON, G.E. (2003) Social and economic burden of mood disorders. *Biological Psychiatry*, **54**, 208–215.
- SKEVINGTON, S.M., CARSE, M.S. & WILLIAMS, A.C. (2001) Validation of the WHOQOL-100: Pain management improves quality of life for chronic pain patients. *Clinical Journal of Pain*, **17**, 264–275.

- SPITZER, R.L., WILLIAMS, J.B.W., GIBBON, M. & FIRST, M.B. (1990) *Structured Clinical Interview for DSM-III-R Personality Disorders (SCID-II)*. Washington, DC: American Psychiatric Press.
- TROMPENAARS, F.J., MASTHOFF, E.D., VAN HECK, G.L., HODIAMONT, P.P. & DE VRIES, J. (in press) The relationship between mood related disorders and quality of life in a population of Dutch adult psychiatric outpatients. *Depression and Anxiety*.
- VAN DER LUBBE, P.M. (1995) Development of the Groningen Social Behavior Questionnaire [In Dutch: Ontwikkeling van de Groningse Vragenlijst over Sociaal Gedrag], PhD Thesis. Groningen: Rijksuniversiteit Groningen.
- VAN NIEUWENHUIZEN, Ch. (1998) Quality of Life of Persons with Severe Mental Illness: An Instrument, PhD Thesis. Amsterdam: Thesis Publishers.
- WEERTMAN, A., ARNTZ, A. & KERKHOF, M.L.M. (2000) *The Structured Clinical Interview for DSM-IV Axis-II Disorders* [In Dutch: Gestructureerd Klinisch Interview voor DSM-IV As-II Persoonlijkheidsstoornissen]. Lisse: Swets & Zeitlinger.
- WHOQOL GROUP (1994) The development of the World Health Organization Quality of Life Assessment instrument (the WHOQOL). In *Quality of Life Assessment: International Perspectives* (eds J. Orley & W. Kuyken). Berlin: Springer-Verlag.
- WHOQOL GROUP (1998) The World Health Organization Quality of Life Assessment (WHOQOL): development and general psychometric properties. *Social Science and Medicine*, **46**, 1569–1585.
- WING, J.K., BABOR, T., BRUGHA, T., BURKE, J., COOPER, J., GIEL, R., JABLENSKI, A., REGIER, D. & SARTORIUS, N. (1990) Schedules for clinical assessment in neuropsychiatry. *Archives of General Psychiatry*, **47**, 589–593.
- WING, J.K., SARTORIUS, N. & ÜSTÜN, T.B. (1998) *Diagnosis and Clinical Measurement in Psychiatry: A Reference Manual for SCAN*. Cambridge: Cambridge University Press.

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